

Subcommittee on Energy and Mineral Resources

Doug Lamborn, Chairman

Hearing Memorandum

December 11, 2015

To: All, Subcommittee on Energy and Mineral Resources Committee Members

From: Majority Staff, Josh Hoffman (x5-9297)
Subcommittee on Energy and Mineral Resources

Hearing: Legislative field hearing on H.R. 3734 (Rep. Crescent Hardy, R-NV), To amend the Surface Mining Control and Reclamation Act of 1977 to provide support to mining schools, and for other purposes. “*Mining Schools Enhancement Act*”

The subcommittee will hold a legislative field hearing on H.R. 3734 (Rep. Hardy), “*Mining Schools Enhancement Act*” on December 14, 2015 at 10:00 AM (MST) in the underground classroom of the Edgar Mine, at the Colorado School of Mines Experimental Mine, 365 8th Avenue, Idaho Springs, Colorado.

Summary of the Bill

H.R. 3734, introduced by Congressman Crescent Hardy (R-NV), and co-sponsored by Congressman Ed Perlmutter (D-CO), would require the U.S. Office of Surface Mining Reclamation and Enforcement (OSM) to direct at least 70 percent of funding authorized for use under Section 721¹ of the Surface Mining Control and Reclamation Act of 1977 (SMCRA) to mining schools. These funds may be used as grants to further studies related to conventional fuel resource development and production, including the study of mining, mineral economics, the development of remining systems, and mineral extraction methods that reduce environmental and human impacts.

Invited Witnesses

Dr. Hugh Miller

Associate Professor of Mining Engineering
Department of Mining Engineering, Colorado School of Mines
Golden, Colorado

Mr. Leigh Freeman

Principal
Leigh Freeman Consultancy
Denver, Colorado

¹ 30 U.S.C. § 1709b.

Ms. Nancy Nuttbrock, PE
Associate & Texas Regional Leader
Brierley Associates
Houston, Texas

Background

Within the next 10 to 15 years, approximately **70 percent** of the United States' mining industry's technical leaders will reach retirement age. The National Research Council (NRC) identified this aging demographic within the mining sector as the "most critical issue" facing the workforce, and highlighted the "paucity of candidates to replace" the retiring workforce in the "mining-related faculty at institutions of higher knowledge."² Evidencing this is the decrease in the number of accredited mining and mineral engineering programs, which has fallen from 25 in 1982 to 14 in 2007, and a corresponding decline in faculty, which fell from 120 in 1984 to 70 in 2007.³

The issues of a retiring workforce and a resultant lack of mining expertise are not limited solely to industry, but also affects the federal regulatory agencies. Indeed, 47 percent of the Mine Safety and Health Administration's coal sector workforce will be eligible for retirement by 2016; while the U.S. Environmental Protection Agency does not employ a single mining engineer in its over 15,000 employee workforce.⁴ Without sufficient numbers of mining experts, more disasters like the Gold King Mine waste water spill are more likely to occur; therefore, it is crucial to encourage the training and development of mining and mineral engineers.

One factor identified by the NRC as contributing to the decrease in mining and mineral engineering programs and faculty is the "relative absence of consistent federal research funding to support graduate programs at mining schools."⁵ In 1994, \$52 million had been directed through the U.S. Bureau of Mines to fund research – a majority of which was received by mining schools.⁶ This program, however, was eliminated, and has been credited to be one of the root causes of weakening mining programs. Thus, one way to reinvigorate mining and mineral engineering programs would be an assurance of federal research directed to mining schools.

When Congress passed SMCRA in 1977, it identified a principal purpose of the act as "provid[ing] for . . . the conduct of research investigations, experiments, and demonstrations, in the exploration, extraction, processing, development, and production of minerals and *the training of mineral engineers and scientists in the field of mining, minerals resources, and technology.*"⁷ Currently, the OSM offers a research grant program for schools to apply for, but a minor fraction of the grants are directed to mining schools. For instance, only one of 18 current or completed

² National Research Council, *Emerging Workforce Trends in the U.S. Energy and Mining Industries: A Call to Action*, at 82 (2014).

³ *Id.* at 85.

⁴ U.S. Office of Professional Management, *Federal Human Resource Data*, <http://www.fedscope.opm.gov/>.

⁵ *Emerging Workforce Trends in the U.S. Energy and Mining Industries: A Call to Action*, at 87.

⁶ *Oversight Hearing on the Aging of the Energy and Mineral Workforce Before the Subcomm. on Energy and Mineral Resources, Comm. on Natural Resources*, 108th Cong. (2004) (testimony from Mary Poulton, Dept. Head of the University of Arizona's Department of Mining and Geological Engineering).

⁷ 30 U.S.C. § 1202(l) (emphasis added).

projects in 2014 was conducted at a mining school, while only seven of the entire 64 projects awarded over the past ten years were awarded to faculty members at mining engineering programs.⁸ To ensure the continued development of mining engineers and the statutory objectives of SMCRA are upheld, OSM should direct more of its grants towards mining and mineral engineering programs.

This bill attempts to address the aforementioned issues by requiring OSM to direct at least 70 percent of its research funding to mining schools for the purpose of “enhance[ing] and support[ing] mining and mineral engineering programs.” Such funds must provide a “significant opportunity for participation by undergraduate and graduate students at mining schools” and must be used to promote “studies of mining, mineral extraction efficiency, and related processing technology;” “mineral economics, reclamation technology, and practices for active mining operations;” “the development of remining systems and technologies that facilitate reclamation that fosters the recovery of resources at abandoned mine sites;” “investigations of mineral resources extraction methods that reduce environmental and human impacts;” “reducing dependence on foreign energy supplies”; and “enhancing the competitiveness of United States energy technology exports.”

List Of All Mining Schools By State Nationwide

School	Location
University of Alaska - Fairbanks	Fairbanks, AK
The University of Arizona	Tucson, AZ
Colorado School of Mines	Golden, CO
University of Kentucky	Lexington, KY
Missouri University of Science and Technology	Rolla, MO
Montana Tech - The University of Montana	Butte, MT
University of Nevada, Reno	Reno, NV
New Mexico Institute of Mining and Technology	Socorro, NM
The Pennsylvania State University	University Park, PA
Southern Illinois University at Carbondale	Carbondale, IL
South Dakota School of Mines and Technology	Rapid City, SD
The University of Utah	Salt Lake City, UT
Virginia Polytechnic Institute and State University	Blacksburg, VA
West Virginia University	Morgantown, WV

Administration Position

Unknown at this time.

⁸ See Office of Surface Mining Reclamation and Enforcement, Applied Science Projects, <http://www.osmre.gov/programs/tdt/appliedscience/projects.shtm>.

Cost

A Congressional Budget Office cost estimate has not yet been completed for this bill. However, since H.R. 3734 only directs the use of existing funds, there is not anticipated to be an impact on the federal budget.

Effect on Current Law (Ramseyer)

Current Law as Amended by H.R. 3734

[new text highlighted in yellow; text deleted in brackets and highlighted in blue]

Section 721 of the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1309b)

§1309b. Research

[The Office of Surface Mining Reclamation and Enforcement]

- (a) **IN GENERAL.**—Subject to subsection (b), the Office of Surface Mining and Enforcement is authorized to conduct studies, research and demonstration projects relating to the implementation of, and compliance with, subchapter V of this chapter, and provide technical assistance to states ¹ for that purpose. Prior to approving any such studies, research or demonstration projects the Director, Office of Surface Mining Reclamation and Enforcement, shall first consult with the Director, Bureau of Mines, and obtain a determination from such Director that the Bureau of Mines is not already conducting like or similar studies, research or demonstration projects. Studies, research and demonstration projects for the purposes of subchapter IV of this chapter shall only be conducted in accordance with section 1231(c)(6) ² of this title.

(b) **Mining Program Support.**--

(1) Of the amounts made available under this Act for activities authorized under this section, the Director of the Office of Surface Mining Reclamation and Enforcement shall ensure that at least 70 percent is expended to enhance and support mining and mineral engineering programs in the United States by funding activities at mining schools.

(2) In expending funds under this section, the Director shall consult with relevant stakeholders and ensure a significant opportunity for participation by undergraduate and graduate students at mining schools.

(3) The Director shall ensure that the activities conducted under this section relate to conventional fuel resource development and production, and include--

(A) studies of mining, mineral extraction efficiency, and related processing technology;

(B) mineral economics, reclamation technology, and practices for active mining operations;

(C) the development of remining systems and technologies that facilitate reclamation that fosters the recovery of resources at abandoned mine sites;

(D) investigations of mineral resource extraction methods that reduce environmental and human impacts;

(E) reducing dependence on foreign energy supplies; and

(F) enhancing the competitiveness of United States energy technology exports.

(c) Mining School Defined- In this section the term “mining school” means a mining or mineral engineering program or department accredited by the Accreditation Board for Engineering and Technology, Inc., that is located at an institution of higher education (as that term is defined in section 631(a) of the Higher Education Act of 1965 (20 U.S.C. 1132(a))) in the United States.